

A NEW SPECIES OF NAMANEREIDINAE: *NAMALYCASTIS GLASBYI* SP. NOV.
FROM INDIAN WATERS¹

OLIVIA J. FERNANDO^{2,3} AND R. RAJASEKARAN^{2,4}

¹Accepted July 05, 2005

²Centre of Advanced Study in Marine Biology, Annamalai University, Parangipettai 608 502, Tamil Nadu, India.

³Email: cdl_aucasmb@sancharnet.in, olivia_cas@yahoo.com

⁴Email: sekar_10677@yahoo.co.in

A new species of the Genera *Namalycastis*, Subfamily Namanereidinae, Family Nereidae, is being described here. Collections from Gorai creek, Mumbai, included Nereid worms previously undescribed. *Namalycastis indica* is a species of *Namalycastis* recorded most frequently from India. Subsequently *N. fauveli* has been described from Indian waters. In addition to this *N. abiuma* species group has also been observed though not recorded. As *N. indica* and *N. abiuma* resemble each other, there has been some confusion with regards to their occurrence from the different areas studied. The present study records the occurrence of a new species *Namalycastis glasbyi*; a key is being provided to help distinguish the different species of *Namalycastis* occurring in Indian waters.

Key words: Nereidae, *Namalycastis glasbyi* sp. nov., Mumbai, *Namalycastis indica*, *Namalycastis fauveli*

Hartman (1959) considered the genus *Lycastis* Savigny 1822 of the subfamily Namanereidinae as a synonym of *Nereis* Linnaeus 1758 and proposed the name *Namalycastis* to replace it. Characters used to distinguish genus *Namalycastis* are: presence of a mid-anterior cleft on the prostomium, two small conical antennae, two conspicuous, broad palps with distinct palpostyle, two pairs of tentacular cirri on either side in two bundles of two tentacles each, of which the longest reaches up to the fourth segment and absence of papillae and paragnaths in the pharynx. Dorsal cirri anteriorly slender and small, conical, posteriorly elongated, nearly one and a half times the length of the dorsal cirrus of the anterior segment. The reduced or lack of notopodial conditions of Namanereidinae is a unique feature among this group. The presence of both notoacacula and neuroacacula in the parapodia of the first two setigers is also unusual among the Nereididae.

The earliest record of this genus in India is by Southern (1921) from Chilika Lake as *Lycastis indica*. Since then, *Namalycastis indica* has been recorded from several estuaries, backwaters from the Andaman and Nicobar Islands and the east and west coast of India (Table 1). Southern (1921) also mentions two specimens collected from Cochin (now Kochi) backwaters and Garia, lower West Bengal, of which the single specimen from Cochin is described to have a single setae anterior to the dorsal aciculum and shorter antennae and tentacular cirri, thus differing from *Lycastis indica*. Glasby (1999) is of the opinion that this single specimen from Cochin, collected by Southern, may likely be another species, *N. abiuma* sp. group. Another species described from Bytarani estuary by Rao (1981) – *Namalycastis fauveli* – has also been frequently observed from several regions along the east coast of India. (Table 1)

Table 1: Records of distribution of *Namalycastis indica* and *N. fauveli* along the Indian coast

Sl. No	Reference	Study area	<i>N. indica</i>	<i>N. fauveli</i>
1.	Southern (1921)	Chilika Lake	X	
2.	Balasubrahmanyam (1960)	Vellar	X	
3.	Ghosh (1963)	Thiruchendur backwaters	X	
4.	Soota & Rao (1977)	Andaman & Nicobar islands	X	
5.	Rao (1981)	Bytarani estuary	X	X
6.	Srinivasa Rao & Rama Sarma (1981)	Vashista-Godavari	X	
7.	Antony and Kuttyamma (1983)	Vembanad estuary	X	
8.	Misra <i>et al.</i> (1984)	Gangetic delta	X	
9.	Misra and Choudhary (1985)	Sagar Island	X	
10.	Misra <i>et al.</i> (1987)	Orissa backwaters	X	
11.	Sunder Raj & Sanjeeva Raj (1987)	Pulicat	X	
12.	Kalaiselvi and Ayyakkannu (1986)	Vellar estuary	X	
13.	Rao (1993)	Mahanadi		X
14.	Rao (1995)	Chilika	X	X
15.	Misra (1995)	Hooghly Malta	X	X
16.	Rao (1998)	Bytarani estuary	X	X
17.	Rao (1999)	Godavari		X
18.	Rao (2001)	Godavari	X	X
19.	Pillai (2001)	Cochin backwater	X	

MATERIAL AND METHODS

During the present study four specimens of the genus *Namalycastis* were collected from sandy, clayey intertidal

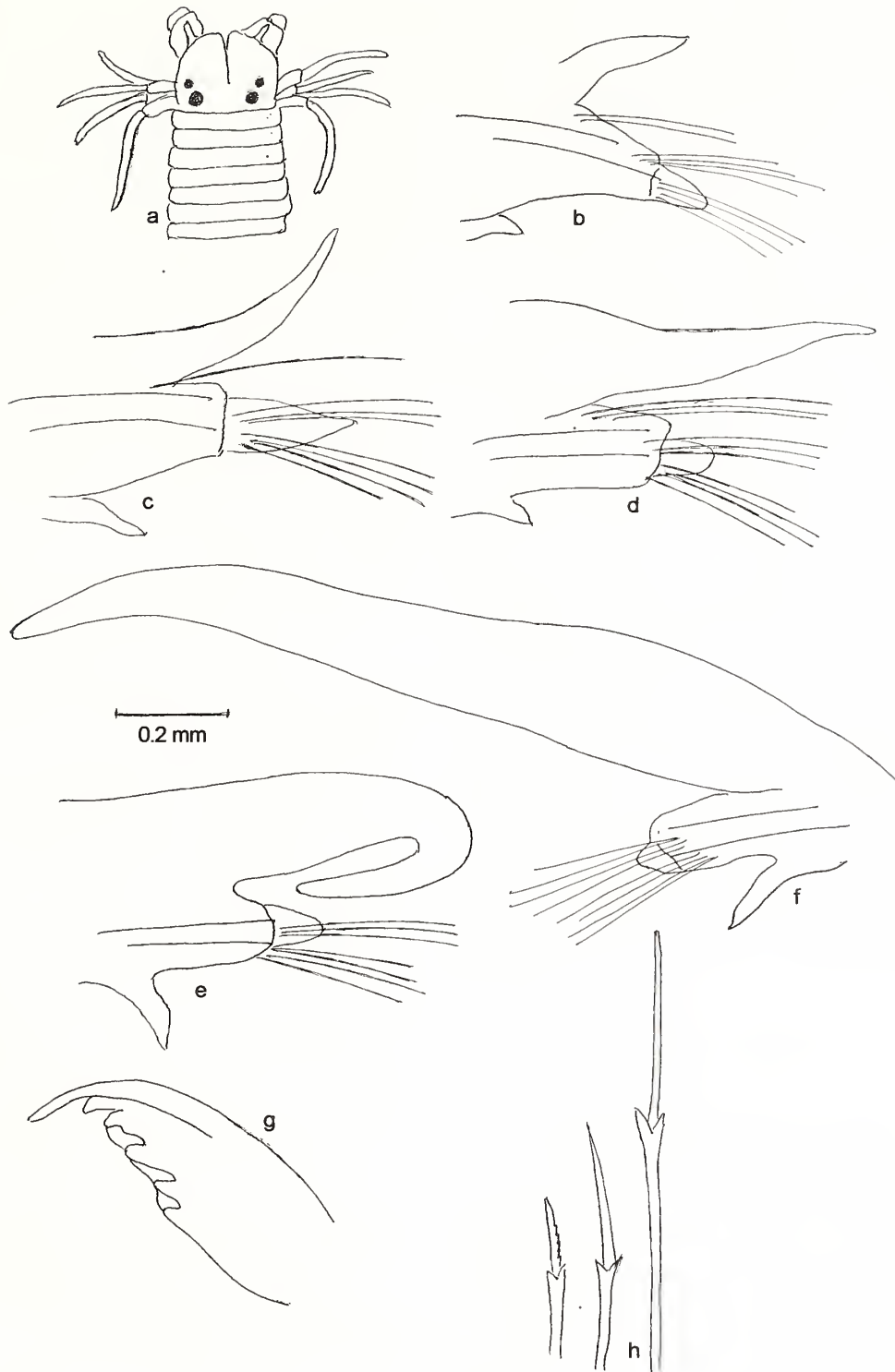


Fig. 1: *Nemalycastis glasbyi*: a. head; b. parapodia of segment 8; c. parapodia of segment 20; d. parapodia of segment 50; e. parapodia of segment 100; f. parapodia of segment 160; g. jaw piece, ventromedial view; h. neuropodial setae

sediments, about 3 km upstream in Gorai creek, Mumbai. Gorai creek situated in the suburbs of Mumbai (formerly Bombay) ($19^{\circ} 12' N$, $72^{\circ} 48' E$) extends 12 km inland through vast mangrove mudflats and low-lying marshy area. South of the

creek mouth, lies the Akse-Madh coastal strip; the northern bank of the creek is bordered by Manori village, which forms a natural beach. As these specimens were different from the species of *Nemalycastis* described earlier, more detailed

observations were made.

Three of the four specimens were complete; the largest had 289 segments up to 64 mm long and 1 mm wide. The longest tentacular cirri reached up to the fifth segment. Maximum width is at segment 15 after which it tapers gradually. The prostomium has a shallow cleft with a narrow longitudinal groove extending from tip to mid-posterior of prostomium. Eyes are in a straight line at the posterior margin of the prostomium and nearly coalescent. The proboscis is armed with a pair of jaws but lacks paragnaths and papillae. Each jaw has a distinct terminal tooth, a single subterminal tooth (Fig. 1g) and a group of four teeth ensheathed proximally. The presence of a single subterminal tooth distinguishes this specimen from all others of the *N. abiuma* sp. group.

The parapodia are sub-biramous, each carries two acicula. Neuropodial ligule bilobed with superior lobe papilliform and inferior lobe globular. Notopodial spiniger starts from setiger 4-6 and varies in number from 1-3, extending up to the 60th segment. Neurosetae are in two fascicles, one below and one above the ventral aciculum. The fascicle above the ventral aciculum (VA) has 8 spinigers and 5 falcigers; the fascicle below the VA has 3 spinigers and 8 falcigers.

Joint of the dorsal cirri with cirrophore is indistinct, posterior dorsal cirri nearly three and a half times as long as the parapodial lobe. The dorsal cirri increase in length posteriorly. On the anterior segment it is conical and only as long as the podium, almost double in length 50th segment onwards and nearly four times long at the 160th segment. At the posterior end the length is five times its width (Fig. 1a-h). Though there is no articulation, a slight constriction is present in the dorsal cirrus.

DISCUSSION

N. indica and *N. abiuma* sp. group are similar in external appearance, and unless setal types and distribution are examined carefully the two species are very difficult to separate (Glasby 1999). Glasby is also of the opinion that most descriptions of *N. indica* in the taxonomic literature fail to give an adequate account of setal type distribution and therefore it is quite possible that the two species have been widely confused. Doubtful taxonomic reference to *N. indica* include those of Ghosh (1963), Day (1967) and Sunder Raj and Sanjeeva Raj (1987). As there is considerable difficulty in describing the distribution of setae, i.e. pre and post supra-acicular neurosetae, and the pre and post subacicular neurosetae, it is not surprising that there is considerable doubt

about earlier taxonomic references.

The present specimens differ from *N. indica* by presence of nearly coalescent eyes, unjointed dorsal cirrus that is elongated and enlarged in the posterior segments. It also differs from *N. fauveli* in which the anterior cleft is absent, the two pairs of eyes arranged transversely and presence of 2-3 subterminal teeth in the jaw. It differs from *N. abiuma* by the presence of notopodial setae (1-3) up to the mid body region, in no particular order, and by the presence of unequal number of heterogomph spinigers and falcigers in the neuropodia.

The presence of a single subterminal tooth in the jaw and the presence of notopodial setae ranging between 1 and 3 in the anterior part of the body distinctly separates these specimens from the previously described species and is therefore described here as a new species *Namalycastis glasbyi*.

KEY TO DISTINGUISH GENUS *NAMALYCASTIS* OBSERVED FROM INDIAN WATERS

1. Acicular neuropodial ligule bilobed, superior lobe papilliform, inferior lobe globular 2
- Acicular neuropodial ligule subconical or weakly bilobed ... 4
2. Antennae small, extending to tip of palpaphore 3
- Antennae small, usually extending short of tip of palpaphore, jaw with 4-5 subterminal teeth & 3-5 ensheathed proximally
N. abiuma sp. group
3. Jaw with 4 subterminal teeth, 4 ensheathed proximally
..... *N. abiuma*
- Jaw with 1 subterminal tooth and 4 ensheathed proximally
..... *N. glasbyi*
4. Jaw with 2-3 subterminal teeth, 2-4 ensheathed proximally, heterogomph falcigers with boss extremely prolonged
..... *N. fauveli*
- Jaw with 2-5 subterminal teeth, 3-5 ensheathed proximally, heterogomph falcigers with boss not prolonged *N. indica*

Habitat: Holotype from a tidal creek nearly 3 km upstream, salinity unknown.

Type locality: Gorai creek, Mumbai, west coast of India.

Etymology: Named after Dr. Christopher J. Glasby for his detailed study of Namanereidinae.

ACKNOWLEDGEMENT

We thank The Director, CAS in Marine Biology and the authorities of Annamalai University for facilities provided.

NEW DESCRIPTIONS

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